Ecology of Infectious Diseases in Natural Populations, edited by B. T. Grenfell and A. P. Dobson, 1995 University Press, Cambridge
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Why should the readers of CMI be interested in this collection of essays, based on a workshop of the Newton Institute of Mathematical Sciences of the University of Cambridge, on the ecology and epidemiology of infectious diseases in wild animals, with excursions into insects and plants? The possible answers to this question are legion—that we would benefit from, and may even enjoy, a broadening of our narrow human-based horizons; that many important animal micro- and macroparasites (the agents of anthrax, brucellosis, bovine tuberculosis or rabies, for example) affect humans too; that methods involved for the study of the epidemiology of infection in animals might be applicable to humans (though the authors tell us that benefit has mostly been in the reverse direction). For whatever reason, I found much to enjoy, with the single exception of the mathematics (which formed a major element of only four or five of the 19 chapters) which is an expression of my, not their, limitations, though one that I suspect that I share with many colleagues!

The book is in three sections, the first of which covers what is known, and not known, about the impact of endemic and epidemic infection on wild vertebrates—rabies in foxes, racoons and African hunting dogs, brucellosis in elks and bison, measles in gorillas and so on. The 'mystical' concept of Ro, the variously defined measure of the speed of spread of infection, is of direct relevance to infection in humans, but one hopes that the intentional manipulation of host population size via infection will not become so! Such sagas as that of the transfer of rinderpest to the south of the Sahara in the late nineteenth century and the possible knock-on effect, via the desperation of the tse-tse fly, on human trypanosomiasis are a reminder that, in the words of the poet, 'all things interlinked are'. Throughout this section, and indeed the whole book, there is a refreshing readiness to confess to deficiencies either of knowledge or of hypothesis, an attitude from which I think we could well profit. 'No wild animal population has been examined . . . to determine if parasites . . . regulate host abundance'—but how would you set about it, say for the lions roaming the Serengeti?

The second section covers the influence of vectors on pathogen ecology (suffering from my mathematics problem), the spatial and genetic factors that affect plant pathogens (I found it quite difficult to image 'castrators, killers and debilitators' at loose in the garden), and the dynamics of insect–pathogen interactions, so important in pest control.

The final section is an interesting account of the impact of ecological and genetic diversity, and of the implications of multiple parasitism: the many gaps are again acknowledged with the refreshing confession that 'among the issues we did discuss, the ratio of ignorance to understanding was frightening enough'.

One is left with a vivid impression of a subject awaiting its day, but fully expecting, when that day comes, to take off in the manner of neo-Darwinism, an expectation that we may hope to share as the subject develops in the context of humans as well as domestic and wild animal infection.

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